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[0001] The invention relates to a full-scarred Rindnappaleder, which is provided with a side dressing at a side, which partial one from a solidified, micro hollow balls contained polyurethane dispersion formed foam structure exhibits. Furthermore the invention concerns a method to the production of such a leather.

[0002] Such leathers are already known. The so disclosed DE 24 45 605 C3 a leather for the production of shoes, pad purchases od.dgl., which is provided with a porous elastomeric coating, the micro hollow balls contains, their sheath from polyvinylidene chloride copolymer or polyvinyl chloride copolymer exists and inside a gas the contained. Those the leather turned away surface of the coating can be provided with a finish additional.

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[0003] From US 4.751.116 A is it already known to apply on the fibrous surface of gap leather a coating existing from two layers whereby those is the gap leather surface turned layer from micro hollow balls a contained, solidified polyurethane dispersion formed. Additional one can be provided with a finish those the gap leather turned away surface of the coating.

[0004] From US 4.923.723 A also a gap leather known became, which is provided with a coating existing from two layers at its fibrous surface, whereby those exhibits the gap leather turned layer micro hollow balls.

[0005] In the automobile industry and for the production of high-quality pad furniture, in addition, for shoe surface material full-scarred neat's leathers become used, which exhibit the required properties and, so that they may to be able to become as genuine full-scarred leather designated, only a very thin side dressing exhibit. These leathers must exhibit further the required flexible and a softness degree of at least 4, preferably more than 4.5, possess, so that they can to be able to be brought on the one hand into the required shape, on the other hand a pleasing palpation and seat feeling ensured is. The softness degree becomes with a softness tester BLC ST300 after IUP36 with a ring diameter of 25 mm of measured. A such softness becomes achieved by very prolonged milling of the leather skins. However a loose scarredness at large parts of the leather skin, so for example within the belly range of the skin, which amounts to between 25% and 40% of the whole area of the skin, develops. This surface is for a subsequent treatment of the leather for high-quality autointerior equipment, like e.g. Car seats, pad furniture and high-quality shoes, not suitable, the waste at expensive leather skin, resultant with prolonged milling, is thus large. An other major drawback of the application of the known leathers provided with a side dressing consists of the fact that these are not or not sufficient breathe-active.

[0006] One has already proposed to apply on the Narbenseite of the leather a plastic material foamed by stirring from air and to cover this after solidification with a paint layer, which is submitted for production of a scar-like surface of an embossment. However the foam material becomes compressed in the area of the Narbtäler, so that the softness and elasticity lost effected by the foam go there. The foam layer exhibits thus a different density, i.e. on the straight abrasion-loaded Narbkuppen a smaller density strong in use, which affects itself for the

later use adverse. In addition the danger exists with this prior art arrangement that with spans of the leather over edges, curvatures od.dgl. due to the compliance goes to the foam layer, above all bottom action of heat the Narbstruktur lost.

[0007] The instant invention has itself to improve to the object provided, a full-scarred Rindnappaleder in such a manner the fact that it exhibits in the automotive industry and in the pad industry required properties and above all after required milling no considerable loose scarredness exhibits which and also with stretching does not lose its Narbstandfestigkeit as well as possesses the required, water vapor permeability. In particular the leather according to invention should be breathe-active, resistant to friction, and also regarding the color abrasion, light-genuine, hydrolsenbeständig and scratch-proof. In addition the leather must be foggingarm and exhibit a small evaporation, so that with use for autointerior equipment fittings of the inner side of the windshield avoided, whereby above all also no toxic gases released becomes to become to be allowed. Furthermore the surface of the leather must be against certain chemicals, in addition, against waters, stable, and it is itself with the Narbung provided leather surface also with a Aufkaschieren on bottom materials, in particular with spans of the leather around curves and/or. Edges adverse do not change.

[0008] The bottom term "full-scarred Rindnappaleder" becomes a leather understood, which receives its softness by prolonged milling with simultaneous formation of the Walknappa surface structure with the characteristic "milling grain". A such leather cannot be manufactured after the prior art methods or to only very insufficient.

[0009] To the solution of the objects posed the invention suggests that the side dressing from on the Narbenseite of the full-scarred neat's leather applied, and 0.04 mm of exhibiting pigmented a thickness between 0.015 mm, preferably first layer from a solidified, polyurethane and/or polyacrylate contained dispersion, the predominant closed cells formed micro hollow balls with a diameter smaller as 45  $\mu\text{m}$ , preferably between 15  $\mu\text{m}$  and 35  $\mu\text{m}$ , and a portion of at least 10 volume. - it exhibits % at open cells and at its upper face an embossment and of a second layer formed applied on this first layer from one of several layers consists if necessary, which is from a crosslinked, a matting agent contained, order for lacquer formed, and that the leather of a milling treatment is submitted. The second layer consists convenient of a solidified aqueous order for PU lacquer.

[0010] In accordance with an other feature of the invention the micro hollow balls exhibit a thin sheath, which preferably consists to more as 75% of polyvinylidene chloride and the little than 25% of polyacrylonitrile, and which micro hollow balls contained inside an heavy gas, preferably isobutane.

[0011] The interstices between the micro hollow balls form the open cells required for the water vapor permeability and breathing activity. These open cells can become still by the fact increased that the thin sheath single micro hollow balls becomes according to invention opened by mechanical and/or chemical action, so that thereby the also single micro hollow balls form open cells. For this purpose according to invention the second layer a partial anlösendes solvent, like ethyl acetate or methylethylketone, knows the thin sheath single micro hollow balls contained. In addition, it can become mechanical opening single micro hollow balls, for example by a stinging into the sheaths the same by means of needles made.

[0012] The leather according to invention is provided thus with a side dressing, whose first layer, i.e. the foam-like pigmented layer, exhibits essentially dense on close together lying close micro hollow balls of small diameter, which mutual pushes away, so that a blow-out of the thin sheaths become prevented during load and withdrawing of the gas effected thereby. This layer exhibits itself thus at all sites a constant, not changing density. It has itself shown, which mill even with eight hours, which become destroyed of the micro hollow balls formed, closed cells and do not escape also hardly from gas. Since between the single spheres only an essentially punctiform contact takes place, nevertheless voids develop, by which in this first layer open cells formed become, which ensure the required water vapor permeability and breathing activity and whose number in mentioned manner can become by opening the sheaths single micro hollow balls still, if necessary, enlarged.

[0013] Second, a matting agent contained paint layer preferably exhibits a thickness between 0.02 mm and 0.05 mm, is thus so thin that the water vapor permeability does not become by this second layer in undesirable manner impaired. This second layer fills out the micropores at the surface of the first layer, without penetrating however into this layer, so that on the one hand an inseparable anchorage between the two layers is ensured, on the other hand an impairment of the elastic properties of the first layer avoided becomes.

[0014] The leather according to invention exhibits a water vapor permeability of more as 0.6 mg/cm<sup>2</sup> .h, preferably from more than 1.0 mg/cm<sup>2</sup> .h and a softness degree of at least 4.5, achieved by milling, without large areas become loose scarred. The softness degree becomes in the manner stated at the beginning of the description measured. The thickness of the Rindnappaleders according to invention amounts to between 1.0 mm and 1.4 mm.

[0015] It proved as convenient, if at least one of the layers a fine-powdery wood flour in an amount between 0,5 and 9 volume. - %, preferably in an amount between 1,5 and 7 volume. - %, contains. Thus the water vapor permeability of the side dressing can improved and/or. by variation of the amount altered and the respective requirements adapted become.

[0016] It is particularly favourable, if the leather before applying the layers exhibits the form of a format cut, if from a large leather skin before applying the side dressing smaller, the use of the leather respective parts are thus cut out. Thus can do better on the different natures whole animal, about 50 m<sup>2</sup> large skin regard taken become, which exhibits a different density in the single areas. Like that the density is lower in the outer region of a whole animal skin, so that also for example the pressure required for coining/shaping can become low maintained, against what in the interior region of the skin the density is higher.

[0017] In addition smaller embossing rolls use can have to become to find, whereby the costs for the acquisition of such embossing rolls essential reduce, this therefore, since with embossing rolls with a length of for example 3 metres, like it for coining/shaping a whole animal skin required to become, dimensioning and storage essential strong sized as with small embossing rolls with a length of for example 80 cms for coining/shaping format cuts, as they become required for format cuts.

[0018] The invention process to the production of the full-scarred Rindnappaleders is essentially characterised in that on the Narbenseite of the neat's leather preferably a pigment contained dispersion on basis of polyurethane and/or polyacrylate applied, which micro hollow balls with a diameter between 15 µm and 45 µm and/or compact particles it contains from which micro hollow balls such by heat input in situ formed will become, whereby the micro hollow balls exhibit a thin sheath from polyvinylidene chloride and polyacrylonitrile, which an heavy gas, preferably isobutane, contains, and whereby the amount of the dispersion becomes a so selected that after its solidification by dehydration a first layer with a thickness between 0.015 mm and 0.04 mm of formed becomes, which, from the micro hollow balls existing, predominant closed cells, however at least 10 volume. - % open cells exhibits that the solidified first layer becomes embossed by application of pressure and/or warm one that a crosslinkable, preferably matting agent contained polyurethane dispersion, becomes on that if necessary in several successive layers, applied, which a second paint layer forms, and that the leather of a milling treatment is submitted. By coining/shaping the first layer bottom application of pressure and warm one some sheaths of the micro hollow balls destroyed become and form additional open, the breathing activity increasing cells in sequence of the low softening point of the micro hollow balls, whose sheath preferably consists to more than 75% of polyvinylidene chloride, at a embossing temperature of bottom 120 DEG C. Simultaneous one becomes an inseparable anchorage with the full-scarred cattle leather ensured.

[0019] In order to destroy the sheaths single micro hollow balls and to increase thus the number of the open cells, also according to invention the thin sheaths single micro hollow balls know by, preferably in the second layer contained, solvent, how ethyl acetate or methylethylketone becomes, fishing rod east. Also mechanical destroying of the sheaths single micro hollow balls is possible, i.e. by the fact that become manufactured in the first layer, if necessary during coining/shaping, by a stinging by means of needles od.dgl., holes, whereby

the thin sheath single micro hollow balls becomes opened. The a stinging can take place hiebei by means of a needle board or a roller and know the needles cold or be warm. After the removal of the needles the holes due to the elastic material, of which the first layer consists, which remain opened micro hollow balls and the open cells resultant thereby however to exist, close.

[0020] Furthermore, if used as matting agents silicon dioxide becomes, preferably in a particle size between 2  $\mu\text{m}$  and 4  $\mu\text{m}$ , opening the sheath single micro hollow balls can take place via influencing this matting agent.

[0021] Convenient one the made embossment by application of an embossing roll with a temperature between 80 DEG C and 120 DEG C, whereby the thermal contact between the embossing roll and the first layer, preferably less than 2 seconds. amounts to. The embossing roll exhibits corresponding depressions at its surface of the Nappanarbenstruktur which can be manufactured, into when coining/shaping the parts of the first layer penetrates and/or. into these in-foam, so that the desired Nappanarbung develops.

[0022] The order for lacquer applied after coining/shaping can become in several steps, for example by successive Aufsprühen on the solidified first layer, made and effected with corresponding matt finish and pigmentation the desired colour of the leather.

[0023] In order to obtain beside the Nappapprägung the typical soft Walknappaeffekt and around the required softness degree from more than 4.5 to will attain, provided according to invention, the leather of a milling treatment over a duration of at least two hours, preferably between 8 and 12 hours to submit. This milling treatment can already take place after the solidification of the first layer, in addition, only after the solidification of the second layer. It is also possible to make a part of the milling treatment after the solidification of the first layer and the remainder after the solidification of the second paint layer.

[0024] If the paint layer consists of several layers, then it is also possible, coining/shaping after applying the first layers to make anyhow however before applying the last layer.

[0025] By the closed cells formed of the micro hollow balls achieved becomes that the soft Walknappaleder according to invention is hardly loose the matter not or and has an high Narbstandfestigkeit, so that the useful surface of a leather skin according to invention is higher around approximately 50% compared with the known Rindnappaledern. By the open cells the required water vapor permeability becomes ensured. Additional ones can become open cells by introduction of air into the first layer achieved. It has itself shown that already with a portion of 10 volume. - amounts to % at open cells the water vapor permeability more than < 0,6mg/cm> 2 <h.

[0026] An improvement and/or. Control of the water vapor permeability can take place further via the fact that at least one of the two layers a formed dispersion before that jobs fine-powdery wood flour in an amount between 0,5 and 9 volume. - %, preferably in an amount between 1,5 and 7 volume. - one mixes %. By varying the amount the water vapor permeability the respective requirements can become adapted. So adverse perforating of the leather in the seat portion of a car seat, adjusted, can become avoided by admixture by wood flour in an appropriate amount.

[0027] In particular if the leather is large stresses exposed, as for example with seats in public means of transport, it is of advantage, if the Narbenseite of the neat's leather before that is submitted to jobs that the first layer of formed dispersion of a pretreatment, by which a better compound of the side dressing with the Narbenseite of the leather achieved becomes. Such a pretreatment can become for example by the fact made that the Narbenseite of the neat's leather, preferably by loops, is aufgeraut. By light grinding with an extreme fine-grained sandpaper the adhesive force becomes substantially increased, whereby however the scar structure of the leather remains to at least 90% obtained.

[0028] In addition, for this purpose the Narbenseite of the neat's leather before applying the side dressing can be flamed. It was found that from this flaming quasi in the surface radicals

result, whereby also the adhesion of the side dressing becomes substantially improved. Best hierfür a flame a similar soldering flame is suitable, heated by which the scar layer becomes only superficial on more than 160 DEG C, whereby in the center and at the underside of the leather the temperature does not exceed 110 DEG C. By this treatment of the leather the altered Narbenseite their appearance not.

[0029] Convenient ones are ripped out to jobs that before that the side dressing formed dispersion from a neat's leather skin of format parts. Thereby cannot only as already mentions, which becomes different natures of the skin in the single areas the same calculation supported and thus the utilization of the entire skin ensured, but it is also possible to change the composition and nature of the side dressing in a simple manner the corresponding requirements. So for example also the single format parts can become so designed that a part of the side dressing is harder softer and another part or that parts of the side dressing exhibit different colors. This can become in a simple manner by the fact achieved that that becomes jobs that the side dressing formed dispersion by a data carrier, thus for example by a CD-ROM, a diskette or a memory chip, controlled. An other advantage of the use of such format parts is convenient in the fact that for jobs that the single layers formed dispersion cheaper spraying devices and finer spray nozzles used to become to be able, so that less Overspray is required and a smaller amount at waste results.

[0030] In the drawing a section is by the leather according to invention in for instance 500-facher magnification illustrated.

[0031] A full-scarred neat's leather 1, which at the Narbenseite not sanded off or only slight one, for example with extreme fine sharpening and/or. Polishing paper mechanical processed is, or by flaming for example by means of a blowtorch pre treated is, in order to improve the adhesion of the side dressing, is provided on its Narbenseite 2 with a side dressing 3, which consists of two layers 4, 5. The layer 4 connected with the Narbenseite 2 consists of a solidified, a polyurethane and/or a polyacrylate contained pigmented dispersion, which contains micro hollow balls 6, their thin sheath from polyvinylidene chloride and polyacrylonitrile formed is and inside an heavy gas, preferably isobutane contained. The micro hollow balls 6 exhibit a diameter between 15  $\mu\text{m}$  and 45  $\mu\text{m}$ , are thus very small, and are to predominant dense because of close together, so that the first layer 4 possesses an essentially closed cellular foam structure. By this arrangement of the micro hollow balls these mutual support themselves off, so that during load a blow-out of the thin sheath and thus withdrawing the gas from the micro hollow balls become avoided, even if the leather according to invention on a support up-covers and/or. over corners, edges od.dgl., bent becomes. The first layer 4 exhibits thus a foam structure with everywhere same density, which does not become also impaired with loads.

[0032] Due to the spherical shape and thereby effected, to essentially punctiform contact the adjacent micro hollow balls however small voids, which open cells form, result from which the required water vapor permeability from more than 0.6  $\text{mg/cm}^2 < h \text{ ensured} >$  are between the micro hollow balls.

[0033] The first layer 4 exhibits thus a microporous foam structure, those in less than 1 g Isobutangas/ $\text{m}^3$  generated and upright obtained becomes and pressure-elastic is. With a continuous bending behavior test shown itself after 100,000 buckling that even in the bending zone the closed cells upright obtained formed of the micro hollow balls remain and not their pressure elasticity to lose.

[0034] The layer 4 becomes formed by the fact that those solidify polyurethane and/or polyacrylate contained dispersion on the Narbenseite 2 applied and by dehydration are left. An heat input is not for this necessarily required, since the hygroscopic leather 1 absorbs majority of the water contained in the dispersion. The micro hollow balls are mixed either to the dispersion in the required quantity or from compact particles by heat input in situ formed. The pigment portion preferably consists to more than 75% of polyvinylidene chloride. This heat input can become for example simultaneous with the required embossment of the upper face 7 of the layer 4 made, so that this upper face receives the desired Nappanarbenstruktur. This embossment made convenient by embossing rolls, which possess embossment corresponding

at its surface one the Nappanarbenstruktur which can be manufactured, and which on a temperature between 80 DEG C and 120 DEG C heated become. By that relative low embossment of less as  $125 \text{ kg/cm}^2$ , preferably less than  $90 \text{ kg/cm}^2$  and a embossing retention time of less than two seconds the leather is hardened hardly compressed and. At the applied embossing temperature of approximately 85 DEG C the micro hollow balls also the so called formed from the compact particles existing to at least 75% polyvinylidene chloride fill out themselves hair cells with gauge pressure, whereby the loose scarredness becomes reduced.

[0035] The upper face 7 of the first layer 4 will result from the second layer 5 covered, between 0,02 and 0.05 mm the thick is and from several, successively for example layers applied by Aufsprühen can, as is this 9 schematic indicated by the boundary. The second layer 5 is between 0.02 mm and 0.05 mm thick, thus very thin, so that by these matting agents contained layer becomes the water vapor permeability only insignificantly impaired, and consists of an aliphatic polyurethane or contains at least aliphatic, crosslinked polyurethane on ester basis. It can from a solidified solution and/or. solidified dispersion exist and pigments exhibit, by which the desired colour of the leather becomes achieved. When applying this second layer 5 anchored itself the material in the open pores at the upper face 7 of the first layer 4, without penetrating however into this first layer 4, whereby on the one hand a good bond between the two layers is 4, 5 ensured, on the other hand the properties of the porous layer 4 not adversely affected it becomes. The structure at the upper face 7 of the first layer 4 stands out at the upper face 10 of the second layer 5, so that at the view side of the leather also the desired scar structure develops.

[0036] One the one of the two layers 4.5 formed solutions and/or. Dispersions or also both solutions and/or. Dispersions can be mixed fine-powdery wood flour, whereby the water vapor permeability of the side dressing is improved. By variation of the amount of the mixed wood flour the water vapor permeability can become altered and so the requirements adapted.

[0037] It is favourable, if those the side dressing formed dispersion and/or. , Those will become cut solution out on format parts of applied from a whole leather skin ripped out, for example out-stamped or. It is possible to adapt the nature of the side dressing of the later use of these format parts. In addition the apparatuses become applying that the side dressing formed dispersion and/or. Solution and above all also for the practice for the embossment of the required pressure essential simpler and more inexpensive.

[0038] The leather according to invention must be milled, so that the required softness is ensured, between two and twelve hours prolonged. This milling can become either already in an operation after the solidification of the first layer 4 or only after the solidification of the second layer 5 made. In addition, it is possible to accomplish a part of milling after the solidification of the first layer 4 and the remainder after the solidification of the paint layer 5. Particularly beautiful soft and little loose-scarred Walknappaleder becomes achieved, if one mills after coining/shaping the first layer 4 about two to four hours, lays on that the second layer on 5 and mills again subsequent two to four hours.

[0039] The magnification of the number of the open cells important for the water vapor permeability, which are between the closed open cells formed of the micro hollow balls, the sheaths the single micro hollow balls can become opened. This knows either on chemical paths by influencing solvent, which is mixed to the second layer 5, takes place, or via a stinging of single sheaths of the micro hollow balls destructive needles into the first layer 4 to take place.

[0040] An other increase of the open cells can take place also via stirring from air into those the first layer 4 formed dispersion before their applying.

[0041] The surface of the paint layer can if necessary exhibit a very thin final finish layer from a polyamide or a mixing PP.

[0042] The determination of the thickness of the entire side dressing 3 this with the help of a solvent, as for example ethyl acetate becomes, 2 remote of the Narbenseite. Agent of a measuring disk of 10 mm diameter the thickness determined becomes with a contact pressure of 2 N. With this method ensured becomes that unevenness, which results from the presence of

Narbkuppen and Narbtälern becomes balanced.

[0043] The leather according to invention feels due to the microscopic fine structure of the foam layer 4, in particular if the paint layer is 5 less than 0.03 mm strong, very pleasing and looks nobly and full-scarred uniform over the whole surface. The paint layer the certain matte and/or. Gloss degree.

[0044] A major advantage of the invention consists of it that become covered beside the improvement of the loose scarredness and the Narbstandfestigkeit small surface defects of the skin, without affecting the water vapor permeability and the softness degree, so that thereby the utilization of the skin-flat is also improved.


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1. Full-scarred Rindnappaleder, which at a side with a side dressing (3) is provided, which partial one from a solidified, micro hollow balls (6) contained polyurethane dispersion formed foam structure exhibits, characterised in that the side dressing (3) from a dispersion contained on the Narbenseite (2) of the full-scarred leather (1) applied, a thickness between 0.015 mm and 0.04 mm of exhibiting, preferably pigmented first layer (4) from a solidified, a polyurethane and/or a polyacrylate, those, predominant closed cells formed, micro hollow balls (6) with a diameter smaller as 45  $\mu$ m, preferably with a diameter between 15 and 35  $\mu$ m, and a portion of at least 10 volume. - % at open cells exhibits and possesses at their upper face (7) the Nappaprägung, and from, if necessary a second layer (5), formed applied on this first layer (4), of several layers, of a crosslinked, a matting agent consists contained order for lacquer on PU basis formed is, and that the leather of a milling treatment is submitted.

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2. Leather according to claim 1, characterised in that the micro hollow balls (6) a thin sheath exhibit, which preferably consists to more as 75% of polyvinylidene chloride and the too less than 25% of polyacrylonitrile, and that the micro hollow balls (6) inside an heavy gas, preferably isobutane, contained.

3. Leather according to claim 1 or 2, characterised in that the thin sheath single micro hollow balls (6) by mechanical and/or chemical action opened is.

4. Leather according to claim 1, 2 or 3, characterised in that the second layer (5) the thin sheaths single micro hollow balls (6) a partial anlösendes solvent, like ethyl acetate or methylethylketone, contains.

5. Leather after one of the claims 1 to 4, characterised in that the second layer (5) a thickness between 0.02 mm and 0.05 mm exhibits.

6. Leather after one of the claims 1 to 5, characterised in that the neat's leather (1) a thickness between 1.0 mm and 1.4 mm exhibits.

7. Leather after one of the claims 1 to 6, characterised in that it a water vapor permeability of more as 0.6 mg/cm<sup>2</sup> < 2 > < h, preferably of more than 1.0 mg/cm<sup>2</sup> < 2 > < h, exhibits.

8. Leather according to claim 1, characterised in that as matting agent silicon dioxide, preferably with a particle size between 2  $\mu$ m and 4  $\mu$ m used becomes.

9. Leather according to claim 1, characterised in that at least one of the layers (4,5) a fine-powdery wood flour in an amount between 0,5 and 9 volume. - %, preferably in an amount between 1,5 and 7 volume. - %, contains.

10. Leather according to claim 1, characterised in that it before applying the layers (4,5) the form of a format cut exhibits.

11. Method to the production of a full-scarred Rindnappaleders according to claim 1, characterised in that on the Narbenseite (2) of the neat's leather one, preferably a pigment contained dispersion on basis of polyurethane and/or polyacrylate applied, which micro hollow



balls (6) with a diameter between 15  $\mu\text{m}$  and 45  $\mu\text{m}$  and/or compact particles it contains from which micro hollow balls such by heat input in situ formed will become, whereby the micro hollow balls (6) exhibit a thin sheath from polyvinylidene chloride and polyacrylonitrile, which an heavy gas, preferably isobutane, contains, and whereby the amount of the dispersion becomes a so selected that after its solidification by dehydration a first layer with a thickness between 0.015 mm and 0.04 mm formed becomes, which, predominant closed cells existing from the micro hollow balls, however at least 10 volume. - % open cells exhibits that the solidified first layer (4) becomes embossed by application of pressure and/or warm one that a crosslinkable, preferably matting agent contained, becomes on that polyurethane dispersion, if necessary in several successive layers, applied, which a second paint layer (5) forms, and that the leather of a milling treatment is submitted.

12. Process according to claim 11, characterised in that the thin sheath single micro hollow balls (6) by, preferably in the second layer (of 5) contained solvents, as ethyl acetate or methylethylketone becomes, fishing rod east.

13. Process according to claim 11, characterised in that in the first layer (4), if necessary during coining/shaping, by a stinging by means of needles od. such. Holes manufactured become, whereby the thin sheath single micro hollow balls (6) becomes opened.

14. Process according to claim 11, characterised in that the embossment bottom application of an embossing roll with a temperature between 80 DEG C and 120 DEG C made, whereby the thermal contact between the embossing roll and the first layer (4), preferably less than 2 seconds. amounts to.

15. Process according to claim 11, characterised in that the embossment with an embossment of less as 125 kg/cm<sup>2</sup>, preferably less than 90 kg/cm<sup>2</sup> made.

16. Process according to claim 11, characterised in that the milling treatment after the solidification of the first layer (4) and/or after the solidification of the second paint layer (5) made.

17. Process according to one of claims 11 to 16, characterised in that the milling treatment over a duration of at least 2 hours, preferably of between 8 and 12 hours, made.

18. Process according to claim 11, characterised in that at least one of the two layers (4,5) a formed dispersion before that jobs fine-powdery wood flour in an amount between 0,5 and 9 volume. - %, preferably in an amount between 1,5 and 7 volume. - one mixes %.

19. Process according to claim 11, characterised in that the Narbenseite (2) of the neat's leather before that is submitted jobs that the first layer (4) formed dispersion of a pretreatment.

20. Process according to claim 19, characterised in that the Narbenseite (2) of the neat's leather, preferably by loops is aufgeraut.

21. Process according to claim 19, characterised in that the Narbenseite (2) of the neat's leather is flamed.

22. Process according to claim 11, characterised in that from a neat's leather skin before that jobs that the side dressing formed dispersion of format parts to be ripped out.

23. Process according to claim 11 and 22, characterised in that jobs that the side dressing formed dispersion by a data carrier controlled becomes.